

Amendment After Allowance
Applicants: Rudy Mazzocchi et al.
Serial No.: 10/051,591

Attorney Docket: MVA1001USC4

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in this application.

Listing of Claims

1 (Currently Amended). A device for filtering fluid flowing through a lumen defined by the wall of an anatomical structure comprising:

a tubular sheath having a lumen;

a guidewire; and

a filter element carried on a distal portion of the guidewire such that the filter element is advanced through the lumen of the anatomical structure by advancing the guidewire and is retracted through the lumen of the anatomical structure by retracting the guidewire, the filter element having pores and having proximal and distal ends and being expandable from a collapsed configuration when the filter element is restrained in the lumen of the sheath to an expanded configuration when the filter element is unrestrained, the filter element in the expanded configuration having a proximally facing opening which is larger than the pores, the guidewire extending to at least the distal end of the filter element.

2 (Original). The device of claim 1 wherein the filter element is self-expandable.

3 (Original). The device of claim 1 further comprising means for expanding the filter element from the collapsed configuration to the expanded configuration.

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4 (Original). The device of claim 3 wherein the means for expanding comprises the filter element being comprised of nitinol.

5 (Original). The device of claim 1 wherein the filter element is attached to the guidewire at a distal region of the guidewire.

6 (Original). The device of claim 1 wherein the distal end of the filter element is connected to a distal band which encircles the guidewire.

7 (Original). The device of claim 6 wherein the distal band is connected in a fixed position on the guidewire.

8 (Original). The device of claim 6 wherein the proximal end of the filter element is connected to a proximal band which encircles the guidewire.

9 (Original). The device of claim 8 wherein one of the proximal and distal bands is connected in a fixed position on the guidewire.

10 (Original). The device of claim 8 wherein the proximal band is slidably disposed about the guidewire.

11 (Original). The device of claim 8 wherein when the filter element is in the collapsed configuration the distal and proximal bands are spaced apart a first distance and when the filter element is in the expanded configuration the proximal and distal bands are spaced apart a second distance, the first distance being greater than the second distance.

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12 (Original). The device of claim 1 wherein when the filter element is in the expanded configuration a proximal portion of the filter element is of sufficient size and shape to engage the wall of the vessel.

13 (Original). The device of claim 12 wherein the filter element has a shape in the expanded configuration which decreases in size from the proximal portion to the distal end of the filter element.

14 (Original). The device of claim 1 wherein the filter element comprises a metal mesh.

15 (Original). The device of claim 14 wherein the filter element comprises nitinol.

16 (Original). The device of claim 1 wherein the guidewire includes a flexible portion extending distally of the distal end of the filter element.

17 (Original). The device of claim 1 wherein the guidewire comprises a solid material.

18 (Original). The device of claim 1 wherein the guidewire comprises metal.

19 (Original). The device of claim 1 wherein the guidewire comprises a tapered portion.

20 – 39 (Canceled).

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40 (Previously Presented). A method of filtering fluid flowing through a lumen defined by the wall of an anatomical structure comprising:

providing a tubular sheath having distal and proximal ends and a lumen;

providing a guidewire including a filter element carried on a distal portion of the guidewire, the filter element having pores and having a distal end and being expandable from a collapsed configuration when the filter element is restrained in the lumen of the sheath to an expanded configuration when the filter element is unrestrained, the filter element having a proximally facing opening which is larger than the pores when the filter element is in the expanded configuration, the guidewire extending to at least the distal end of the filter element;

introducing the guidewire into the lumen of the anatomical structure while the filter element is restrained in the collapsed configuration within the lumen of the tubular sheath;

advancing the guidewire through the lumen of the anatomical structure until the filter element is positioned at a desired location;

removing restraint on the filter element to expand the filter element to its expanded configuration;

filtering fluid flowing through the lumen of the anatomical structure into the proximally facing opening with the filter element;

substantially closing the proximally facing opening to the filter element; and

removing the guidewire and filter element from the lumen of the anatomical structure.

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41 (Original). The method of claim 40 wherein in the step of providing a guidewire the guidewire comprises a solid material.

42 (Original). The method of claim 40 wherein in the step of providing a guidewire the guidewire comprises metal.

43 (Original). The method of claim 40 wherein in the step of providing a guidewire the guidewire comprises a tapered portion.

44 (Original). The method of claim 40 wherein in the step of providing a guidewire the filter element is self-expandable.

45 (Previously Presented). A method of filtering emboli from fluid flowing through a lumen defined by the wall of an anatomical structure comprising:

providing a tubular sheath having distal and proximal ends and a lumen;

providing a guidewire including a filter element carried on a distal portion of the guidewire, the filter element having pores and having a distal end and being expandable from a collapsed configuration when the filter element is restrained in the lumen of the tubular sheath to an expanded configuration when the filter element is unrestrained, the filter element having a proximally facing opening in the expanded configuration which is larger than the pores, the guidewire extending to at least the distal end of the filter element;

introducing the guidewire into the lumen of the anatomical structure while the filter element is restrained in the collapsed configuration in the lumen of the tubular sheath;

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advancing the guidewire through the lumen of the anatomical structure until the filter element is positioned at a desired location;
removing restraint on the filter element to expand the filter element to its expanded configuration;
filtering emboli from fluid flowing through the lumen of the anatomical structure with the filter element;
at least partially closing the proximally facing opening; and
removing the guidewire and filter element from the lumen of the anatomical structure after the proximally facing opening has been at least partially closed.

46 (Canceled).

47 (Original). The method of claim 45 wherein in the step of providing a guidewire the guidewire comprises a solid material.

48 (Original). The method of claim 45 wherein in the step of providing a guidewire the guidewire comprises metal.

49 (Original). The method of claim 45 wherein in the step of providing a guidewire the guidewire comprises a tapered portion.

50 (Original). The method of claim 45 wherein in the step of providing a guidewire the filter element is self-expandable.

51 – 56 (Canceled).